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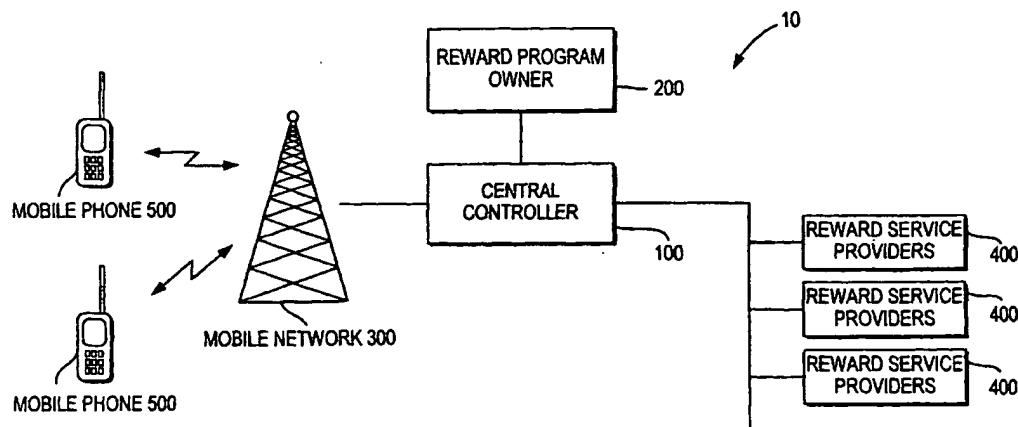
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(54) Title: **METHOD AND APPARATUS FOR ACCESSING AN INTERACTIVE INCENTIVE REWARDS PROGRAM THROUGH A WIRELESS COMMUNICATIONS NETWORK**



(57) Abstract: A method and apparatus for accessing an interactive incentive reward to notify program members of eligibility to redeem awards offered by reward program participants. A central controller interfaces a reward program owner database, and one or more reward service provider databases to a mobile network. The network provides communication with terminal devices, such as mobile phones used by the program members. In response to a reward query placed by a member through a member's mobile phone, the central controller will access the member's program account to determine an account balance, access the reward service provider databases to locate, in response to the query, reward providers in a general vicinity of the member, and communicate information through the mobile network to the member's mobile phone concerning the located rewards. The member can then redeem the rewards.

Method and Apparatus for Accessing an Interactive
Incentive Rewards Program Through a Wireless
Communications Network

5

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention pertains to interactive incentive reward programs where consumers accumulate credit coupons or points through the purchase of reward program provider goods and services. The points are then used for redemption to acquire rewards, typically in the form of free programs subscriber goods or services. More particularly, the present invention relates to a method and apparatus for performing an interactive exchange of incentive reward program information through a wireless communications network.

2. Description of the Related Art

A common practice to increase loyalty of existing customers and attract new customers is to provide an incentive reward program. Numerous types of reward programs exist in different industries. Airlines have frequent flyer programs, hotels have frequent guest programs, retailers provide customer discounts and credit card companies employ frequent card usage programs. In all such programs, members (e.g. consumers) accumulate coupons or points depending on a customer's usage, such as the amount of mileage flown, dollars purchased, etc., from program provider/participants (such as participating airlines, rental car companies, hotels, gasoline stations, credit card companies, etc.). When customers have accumulated a sufficient amount of points, the customers can redeem them for various goods or services. One possibility is to redeem accumulated points for a

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reward chosen from a specific list of rewards identified by the rewards program. Members may order a particular reward by mail or request a gift certificate which can then be used to redeem the reward at a participating
5 retail outlet or reward provider location. Other redemption techniques provide for the transfer of points to different reward programs for redemption.

In existing incentive reward programs, members are typically forced to place separate phone calls to
10 check reward account balances or to order or redeem particular rewards. In a more recent incentive program which is described in U.S. Patent No. 5,774,870 (Storey), an on-line system, such as the Internet, is used for a member to obtain reward account information and engage in
15 coupon redemption through the use of a computer. Nevertheless, such existing reward programs possess significant drawbacks which make their use cumbersome and less attractive to consumers. For example, members are usually willing to exploit earned reward points as soon
20 as they accumulate, i.e. as soon as a threshold point value is reached. Also, when a need for a particular service has emerged (e.g. a rental car, gasoline, etc.), the member would prefer to access the available services relatively instantly. This is especially the case when
25 the member is travelling. Therefore, members are neither willing to wait until their rewards or certificates are posted nor are they ready to make long trips to redeem accumulated rewards. Thus, it is desirable for members to locate the nearest service providers relative to a
30 member location which are able to receive accumulated points for the particular reward when a need for a particular service arises. This allows members to frequent service providers in close proximity to the member so that the member can use those services and

accumulate reward points, rather than using services from a provider which is not part of a member's program and, thus, no rewards points will be awarded.

Additionally, there exists a problem of how to use accumulated reward points when making a point of sale purchase. With existing methods, it is impossible without advance ordered gift certificates or separate phone calls to transfer accumulated points from one rewards program to another.

One background concept of the present invention is the availability in new mobile communication technologies and standards like Wireless Application Protocol (WAP) to allow the interaction of mobile phones with the Internet. New technologies like GPRS will facilitate and make the use of Internet based services more convenient and enable sophisticated interaction services with mobile phones.

SUMMARY OF THE INVENTION

The present invention satisfies the aforementioned deficiencies by providing a method and apparatus for accessing a reward program with a wireless communication device, such as a mobile phone. The invention allows members of reward programs to make service inquiries through a mobile phone connection. Essential reward offers from service providers are searched and the reward offers are communicated to the member's mobile phones in response to an inquiry placed by the member, including reward offers which are payable with accumulated points and which are located in the same geographic area as the requesting member. The present invention provides reward program members with the location of the nearest service providers able to redeem accumulated points for a particular reward when the need

for a particular service emerges for the member. In addition, it provides a member with the locations of the nearest service providers so that the member can frequent those providers and accumulate additional reward points.

5 Thus, the present invention provides location dependent reward program information to mobile communication devices such as mobile phones. A reward request may be initiated either by an external application, a mobile phone user, or by the network, such
10 as in response to a pre-stored query which is executed when a threshold point total is reached. The location of a mobile phone can be determined by cell-based and/or coordinate based methods. In cell-based methods, the position of a mobile phone user can be determined with an
15 accuracy of one cell or a number of cells. In coordinate based methods, the subscribers position is determined in latitude and longitude coordinates. There is also a possibility to get positioning information from satellites, which enhances the accuracy of positioning.

20 The present invention advantageously allows members to modify the search region to include a larger or a smaller region, thereby increasing or decreasing the potential number of reward providers in the specific region.

25 The present invention also allows members to receive reward offers through a mobile telephone automatically when specific threshold point amounts are reached. The members can further specify the types or categories of rewards the member is interested in
30 receiving, and information pertaining to such reward types will be provided automatically.

 The present invention advantageously enables reward program members to place reward service requests via a mobile phone. Requests are communicated to reward

service providers, e. g. participants of reward programs, which can accept or reject particular requests depending on service or product availability. When the reward service or product request is accepted, the required point quantity for obtaining the requested goods or services are frozen in the requesting member's account until a trade verification is complete. After trade verification is complete, such as by manual signature or mobile payment method, etc., the reward service provider will be credited by the amount of points used.

In another embodiment of the invention, the reward service provider can provide members with information concerning modifications or substitutions of reward offers upon a member's request or automatically upon accumulation of a threshold amount of points. Such information can be conveyed through the central controller or by updating a database contained in the central controller.

Other objects and features of the present invention will become apparent from the following detailed description considered in conjunction with the accompanying drawings. It is to be understood, however, that the drawings are designed solely for purposes of illustration and not as a definition of the limits of the invention, for which reference should be made to the appended claims. It should be further understood that the drawings are merely intended to conceptually illustrate the structures and procedures described herein.

30

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings:

FIG. 1 is a block diagram of a presently preferred embodiment of the present invention;

FIG. 2 is a diagram of the servicing region of a mobile network cell;

FIG. 3 illustrates a flow chart of the processing of a reward offer request;

5 FIG. 4 illustrates a flow chart of the processing of an automatic reward offer; and

FIG. 5 illustrates an embodiment of the processing of a reward service request.

10 DETAILED DESCRIPTION OF THE PRESENTLY PREFERRED
EMBODIMENTS

FIG. 1 is an overall system block diagram of an apparatus 10 for accessing an interactive incentive rewards program in accordance with a presently preferred
15 embodiment of the invention. In this embodiment, a central controller 100 is responsible for operations and communications between different parties, namely, reward program members such as consumers, and reward program participants such as service providers, e.g.
20 participating airlines, rental car companies, hotels, gasoline stations, credit card companies, etc. Central controller 100 includes databases containing information about reward offers, reward program members, reward service providers, reward accounts, etc. to maintain
25 operations. The central controller is linked to one or more reward program owners 200, such as credit card companies, airlines, hotels, long distance providers, etc. which run particular member rewards programs, and to reward service providers 400 for exchanging information
30 therewith. It will be appreciated that in certain reward programs, the program owner or operator may also be a reward service provider. For example, in a program run by an airline, the airline will be the program owner 200 and a service provider 400, and service companies which

are participants in the program may include hotels, car rental companies, as well as restaurants, etc. The connection to the service providers and reward program owners may be through any manner such as via an Internet
5 connection using a public switched phone network, dedicated data lines, or via wireless transmission such as to the use of a cellular or satellite network. Although only three reward service providers 400 are depicted in FIG. 1, it will be appreciated that any
10 number of service providers can be included.

As explained above, central controller 100 is also interfaced or connected with the reward program owner 200 such as credit card companies, long distance carriers, airlines, hotels, etc. This connection is used
15 to check or update reward account status of members depending on the particular method or guidelines used by the reward program owner to calculate the accumulation of points. This connection is also used for reward program maintenance, modification, etc., to update and otherwise
20 adjust particular members' accounts with the reward program owner. Other components of the overall system are a mobile phone network 300 and wireless communications devices 500 such as mobile phones, PDAs, portable computers, etc. and the wireless devices are
25 used as terminals for reward program members. The number of wireless communication devices 500 as well as the number of mobile networks 300 used in the inventive method can be as large as required. The mobile network 300 connects the mobile phones to the central controller
30 100 and generates location information which is used by the central controller for performing reward program searches.

Apparatus 10 and the methods described below obtain and communicate information concerning member

rewards programs to members based upon selected parameters and queries. For example, a member can seek the location of the nearest program participants (e.g. merchants, service providers, etc.) relative to a location of the member so that the member can conveniently redeem accumulated reward points or accumulate additional points by soliciting such program participants.

The member's location can be determined by various techniques. For example, in cell-based systems as shown in FIG. 2, an approximate location of the member can be determined from the location of a cell tower 310 in communication with the member's terminal device, e.g. phone 500. As is known in the art, tower 310 services a particular geographic region, such as the region defined by radius S. Once a particular tower 310 is identified, reward service providers within that region are determined. If additional providers are required, the region can be expanded, e.g. to the regions having radii R1 and R2. Alternatively, to reduce the number of location providers, the region can be reduced to a region having a radius less than radius S. Although circular regions have been described, it will be appreciated that regions having various shapes can be used. As another alternative, the search area can be increased by incorporating areas serviced by towers adjacent the subject tower 310.

It will be appreciated that the present apparatus and method can be employed in connection with non-cell based wireless technology such as a satellite or Global Positioning System (GPS) provided a terminal device or phone 500 is equipped with, for example, GPS capability. In such coordinate based systems, a member position can be determined by obtaining longitudinal and

latitudinal coordinates and a search area can be defined based on or including such obtained member location for seeking reward providers.

The processing of a reward offer request placed
5 by a member, such as to locate proximate service providers for redemption of available services, is depicted in FIG. 3. In step 3.1 of FIG. 3, a program member submits a reward offer request to the central controller 100. The submitted request can be a vocal
10 instruction or a text message entered on a keypad of a wireless communication device such as a PDA, computer or mobile phone, and transmitted, for example, by SMS or over a CDMA mobile network. The submitted instruction may specify the type or category of reward the member is
15 seeking and will contain the member's reward program account number or other identification information to allow access to a member's reward program account file in the reward program owner database 200.

As shown in FIG. 3, a car rental reward is
20 sought in step 3.1. In step 3.2 a general location of the member is determined and attached to the request, which is then transmitted to the central controller 100. In a preferred embodiment, the location of the member is determined, as explained above, using location service
25 area (LSA) identification employed in known SoLSA techniques. The LSA is a location service area which, in the preferred embodiment, is the cell coverage area of a particular mobile network cell through which the wireless communication device (mobile phone) communicates at the
30 time the reward offer request is placed. Other location determining techniques which can be employed are the techniques discussed in WO-9205672 *Method of Location in a Mobile Radio System* (Televerket) 1992; U.S. Patent No. 5,128,925 *Pseudo Synchronization of a Mobile Network*

(Matra) 1992; WO-9727711 *Locating a MS in a Digital Radio Communication System* (Nokia) 1997; EP 0 930 513 A2 *Cellular Radio Positioning* (Nokia) 1999 and WO-9819479 *Location-Dependent Services in a Mobile Communication System* (Nokia) 1998.

The request is then processed by the central controller 100 and a reward program owner's database 200 (e.g. airline carrier, credit card company, etc.) is searched, using the member's account number or identification, to determine the member's account status. A query or petition request is next conveyed to locate the requested reward (e.g. car rental services) within a geographic area encompassing the identified location of the requesting member (step 3.3). The query or petition request can be either conveyed to a database located within the central controller 100, or to a reward service provider database 400. In the former technique, the central controller database will contain reward information which can be updated, as desired, through interaction and connection with the service provider databases 400. If rewards are located, the reward information is then transmitted by the mobile network to the member's mobile phone 500. As shown in FIG. 3, the request located a rental car service provider in the vicinity of the member and provides parameter information such as the location of the rental car service provider, the address, the type of car available, and the amount of points needed for the service. Rather than a reward, the locations of the nearest service providers will be provided so that the member can frequent such providers to accumulate or "earn" additional reward points.

In the event too few or no reward offers are found within the initial search area, a larger search area can be designated and a further search can be

conducted. To expand the area, the new LSA could include the original cell coverage (shown in FIG. 2 as the region defined by radius S, or larger coverage areas (defined by radii R1 or R2). In a preferred embodiment, a search area can also be reduced such as, for example, if an
5 initial search results in numerous reward offers.

The reward redemption method and apparatus disclosed herein can also be used to provide automatic conveyance of reward information based on certain
10 parameters specified by a member. For example, a particular member may be interested in receiving redemption program information concerning a particular service (e.g. gasoline reward offers). In reward programs, services are available based on an accumulation
15 of a predetermined amount of points. For example, a gasoline reward may require the accumulation of 20,000 points. As a member purchases goods or services from program participants, points are accumulated in the member's account. When a threshold amount of points is
20 earned, the reward program owner 200 will notify the central controller 100, which will then conduct a search either in its internal database or among the reward service provider databases 400 to retrieve available rewards (requiring 20,000 points or less) in the
25 specified categories (gasoline) and alert the member of the nearest provider gas stations. In this manner, a member can instantly redeem accumulated points.

The automatic conveyance feature of the present invention is illustrated in the flow chart of FIG. 4. In
30 step 4.1 a member submits a request to receive automatic gas reward offers. The member then proceeds to accumulate reward points in any manner of ways, such as through the use of a credit card issued by or affiliated with the reward program owner (step 4.2). The accumulated points

are credited to the member's account in the reward program owner's database 200. Once a threshold amount of points is acquired, central controller 100 conducts a search among reward service provider databases 400 to
5 locate participating gasoline stations in proximity to the member's current location and then communicates the location of the located gas stations to the member.

Referring now to FIG. 5, a depiction of the processing of a reward service request is shown. In step
10 5.1, a mobile phone user submits an actual reward service request to the central controller. In this example, the requested reward service is a hotel reservation. The central controller 100 communicates the request to reward service providers (400) which accept or reject the
15 request depending on service availability. This function can be made manually by the reward service provider or automatically based, for example, on the operating hours of the service provider database. In step 5.4, the central controller sends verification about acceptance or
20 rejection to the requesting member as well as to the particular service provider. If the reward is accepted (e.g. a hotel reservation is available), the reservation can be confirmed by a manual signature at a remote location or at the service provider's location.
25 Alternatively, the reservation can be confirmed through mobile payment methods through the use, for example, of a serial bus, parallel bus, infrared interface or low power RF interface such as Blue Tooth or e-commerce methods, as is known in the art. The amount of points used to obtain
30 the requested services will then be subtracted from the member's account in the reward program owner's database (200).

Thus, while there have shown and described and pointed out fundamental novel features of the invention

as applied to a preferred embodiment thereof, it will be understood that various omissions and substitutions and changes in the form and details of the devices illustrated, and in their operation, may be made by
5 those skilled in the art without departing from the spirit of the invention. For example, it is expressly intended that all combinations of those elements and/or method steps which perform substantially the same function in substantially the same way to achieve the
10 same results are within the scope of the invention. Moreover, it should be recognized that structures and/or elements and/or method steps shown and/or described in connection with any disclosed form or embodiment of the invention may be incorporated in any other disclosed or
15 described or suggested form or embodiment as a general matter of design choice. It is the intention, therefore, to be limited only as indicated by the scope of the claims appended hereto.

CLAIMS

What is claimed is:

1. An apparatus for accessing an interactive incentive rewards program for providing a program member
5 having a rewards program account with information concerning rewards offered by reward providers, comprising:

a rewards program operator database containing data concerning the rewards program account of the
10 program member and a member account balance of points accumulated by the member;

a reward provider database containing data concerning rewards offered by reward providers associated with a rewards program operator;

15 a mobile network for providing communication services to the member through a wireless terminal device capable of connecting to a mobile network in a varying location; and

a central controller in communication with
20 said rewards program database, said reward provider database and said mobile network for providing the member with rewards program information offered by reward providers.

2. The apparatus of claim 1, wherein said
25 mobile network includes means for identifying a region containing the wireless terminal device, and wherein the rewards program information is provided within the identified region.

3. The apparatus of claim 1, wherein said
30 mobile network comprises a plurality of cells for providing communication services to mobile networks subscribers, said means for identifying comprises determining a subject cell in said plurality of cells

which is in direct communication with the wireless terminal device.

4. The apparatus of claim 3, wherein said subject cell has a corresponding servicing region and
5 wherein said identified region corresponds to said servicing region.

5. The apparatus of claim 1, wherein said central controller retrieves information from said reward provider database and communicates the retrieved
10 information to said wireless terminal device in response to a request transmitted by said wireless terminal device through said mobile network.

6. The apparatus of claim 1, wherein said wireless terminal device is one of a mobile telephone, a
15 personal digital assistant, and a portable computer.

7. The apparatus of claim 4, wherein said wireless terminal device is one of a mobile telephone, a personal digital assistant, and a portable computer.

8. The apparatus of claim 1, wherein said
20 central controller includes means for providing a reservation instruction to a rewards provider in response to an instruction transmitted by the wireless terminal device, and means for transmitting reward points from said rewards program operator database to
25 said reward provider database for securing the reserved reward.

9. The apparatus of claim 1, wherein said central controller contains means for monitoring the member account balance to determine when a threshold
30 number of points is accumulated and accessing said reward provider database to locate and communicate available rewards corresponding to said threshold.

10. A method of accessing an interactive incentive reward program operated by a rewards program operator in which reward providers provide rewards to program members based on an amount of reward points in a
5 program member account maintained by the program operator, comprising the steps of:

receiving at a central controller a request for information concerning one of reward availability, a reward provider and the program member account;

10 accessing a reward provider database with said central controller to locate, based on said obtained information, reward providers within a region encompassing a location of a wireless terminal device used by the program member to identify select reward
15 providers; and

transmitting, through a mobile network to said wireless terminal device, information in response to the information request.

11. The method of claim 10, further
20 comprising the step of the program member accepting a reward from one of the located reward providers.

12. The method of claim 11, wherein said accepted reward corresponds to a designated number of points, said method further comprising the steps of
25 reducing the member account balance by said designated number of points.

13. The method of claim 10, comprising the step of obtaining information on the program member account by accessing a reward program operator database
30 with said central controller.

14. The method of claim 10, further comprising the step of determining the location of the wireless terminal device used by the program member.

15. The method of claim 14, wherein said step of determining a location of a wireless terminal device includes identifying a mobile network cell in communication with said wireless terminal device.

5 16. The method of claim 14, wherein said step of determining a location of a wireless terminal device includes defining a geographic servicing region of said mobile network cell, and wherein said step of accessing a reward provider database comprises locating reward
10 providers within one of said servicing region and a region encompassing said servicing region.

 17. The method of claim 10, further comprising the step of selecting, from a menu of identified select reward providers transmitted to said
15 wireless terminal device, a desired reward provider by entering a command on said wireless terminal device.

 18. The method of claim 17, further comprising the step of reserving a reward offered by the select reward provider in response to said command.

20 19. The method of claim 18, further comprising the step of transferring reward points from said reward program operator database to said reward provider database to reflect a redemption of points by the program member.

25 20. A method of providing offers from service providers based on a threshold amount of rewards points accumulated by a user of a wireless terminal device, said method comprising the steps of:

 determining the amount of rewards points
30 accumulated by the user;

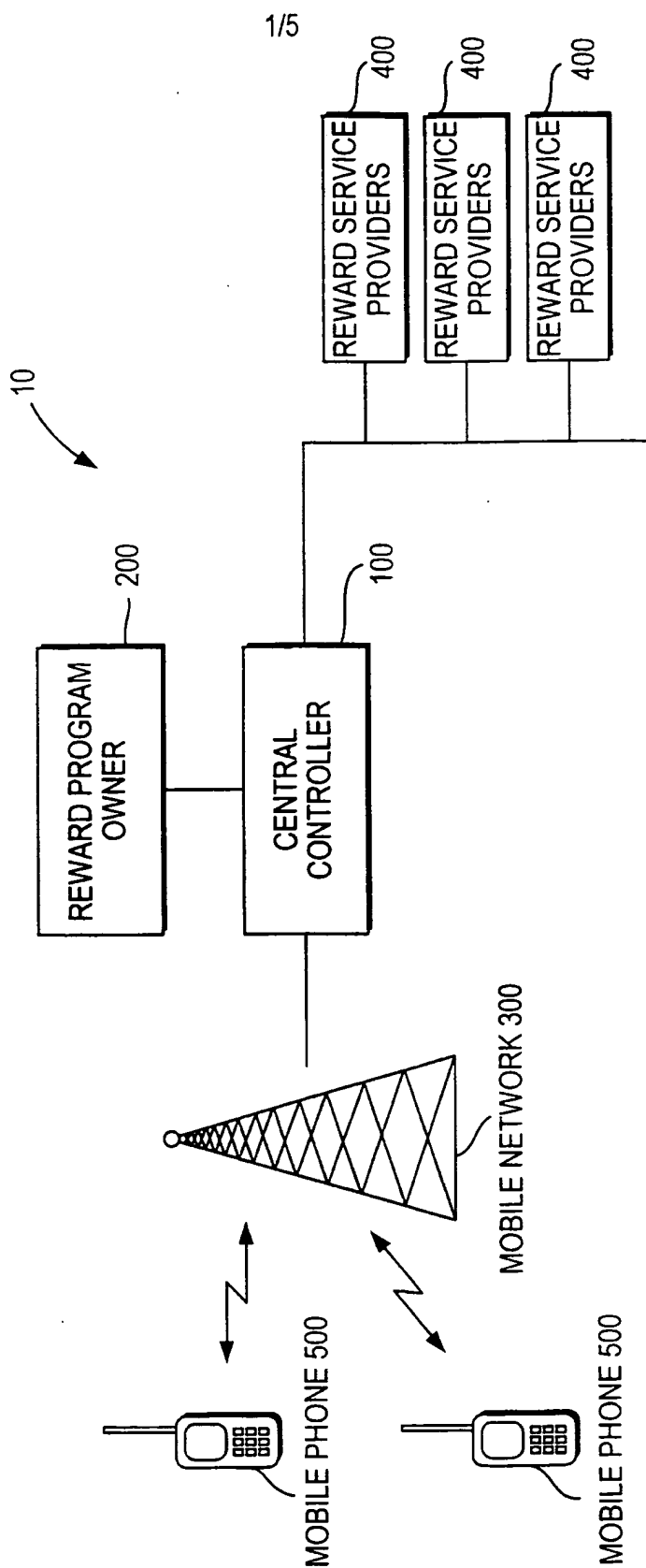
 determining available services corresponding to the determined threshold amount of rewards points;
and

communicating with said wireless terminal device to convey information concerning the determined available services.

21. The method of claim 20, wherein the step
5 of determining available services comprises determining services offered by service providers within a geographic region containing a location of said wireless terminal device.

22. The method of claim 20, wherein the
10 available services are of the group consisting of travel offers, airline tickets, car rentals and hotel rooms.

FIG. 1



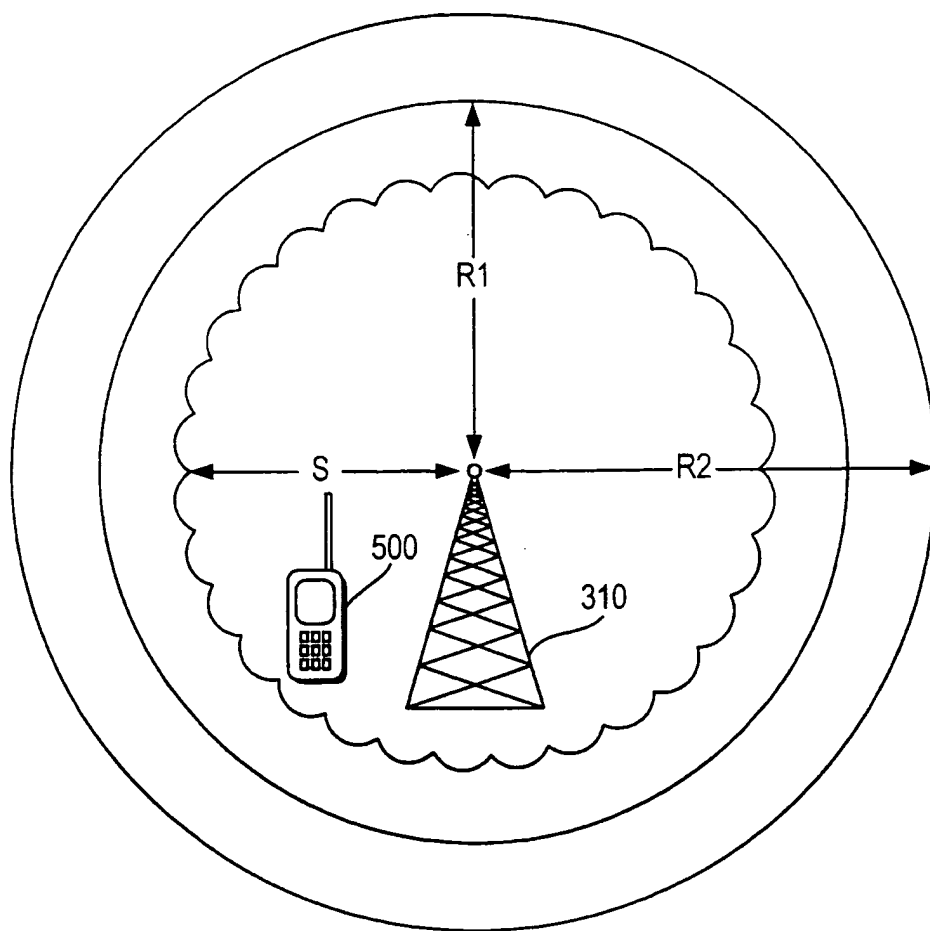
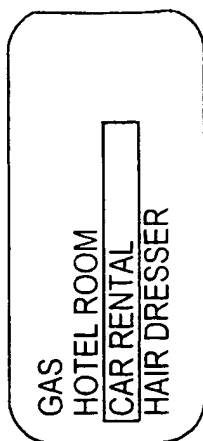


FIG. 2

MOBILE PHONE USER
MAKES A REWARD OFFER
REQUEST



LSA ID : 34563

MOBILE PHONE NETWORK
ATTACH THE REQUEST WITH
LOCATION INFORMATION

CENTRAL CONTROLLER CHECKS
USER'S REWARD ACCOUNT
STATUS AND CREATES A
PETITION TO MAKE A SEARCH

SERVICE : CAR RENTAL
LSA ID : 34563
POINTS : 23 000

IF OFFERS NOT FOUND USER
CAN MAKE A NEW SEARCH WITH
LARGER SEARCH AREA

NEW
LSA ID : 3456

CENTRAL CONTROLLER SENDS
FOUND OFFERS AND CONTACT
INFORMATION

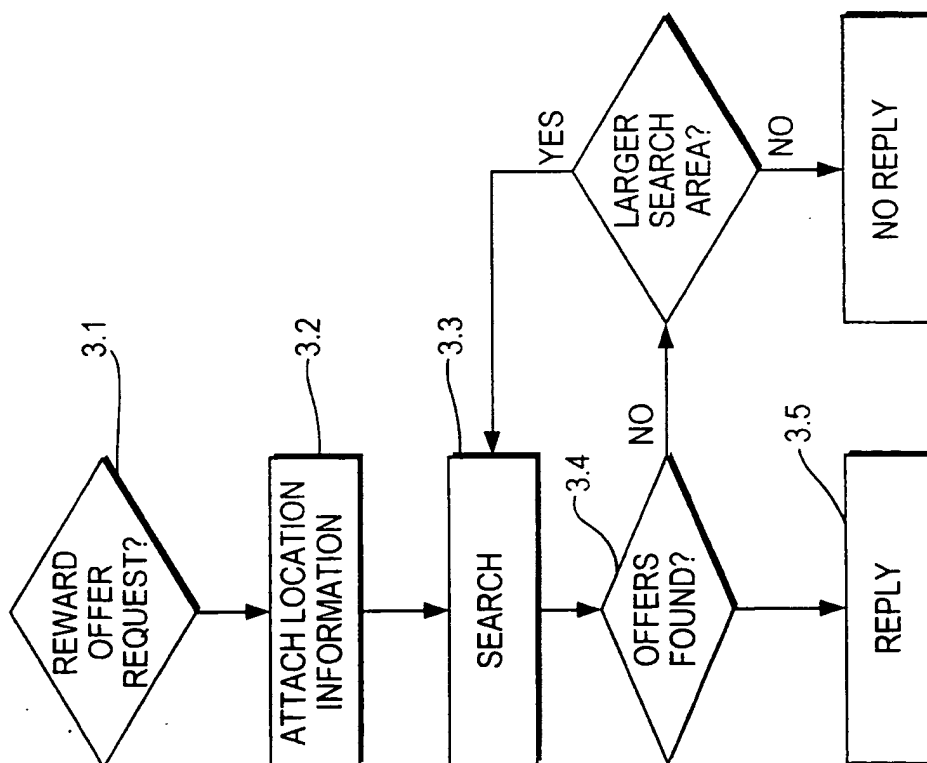
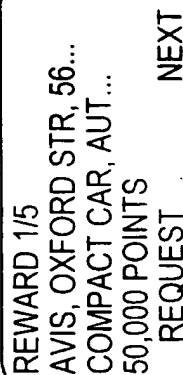


FIG. 3

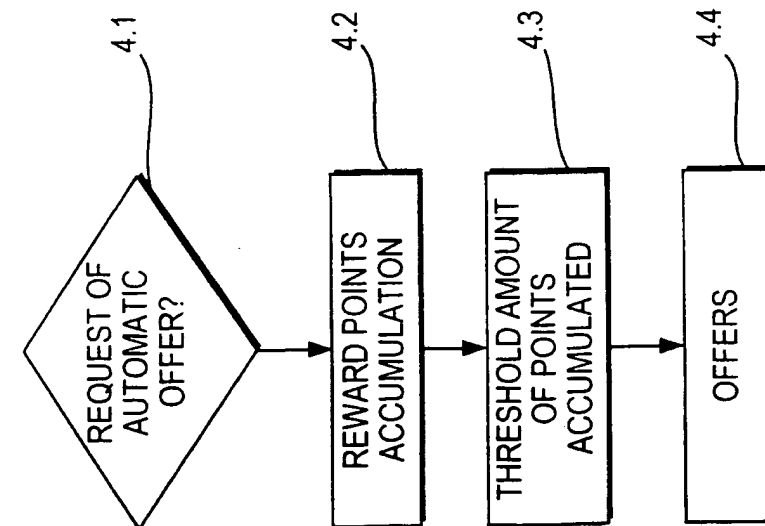
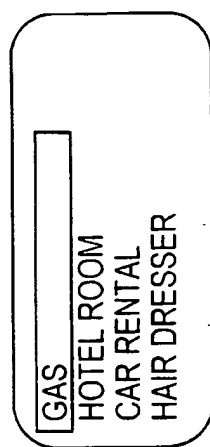


FIG. 4



MOBILE PHONE USER ACCEPTS
TO RECEIVE AUTOMATIC GAS
REWARD OFFERS

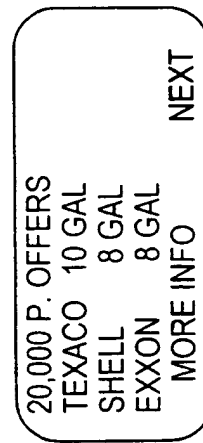
E.G., CREDIT CARD - PAYMENTS

4/5

POINTS > 20 000

MOBILE PHONE USER MAKES
REQUIRED TRANSACTIONS TO
OBTAIN REWARD POINTS

MOBILE PHONE USER MAKES
REQUIRED SPECIFIC TRESHOLD
AMOUNT OF POINTS



20,000 POINT GAS OFFERS TO
MOBIL PHONE

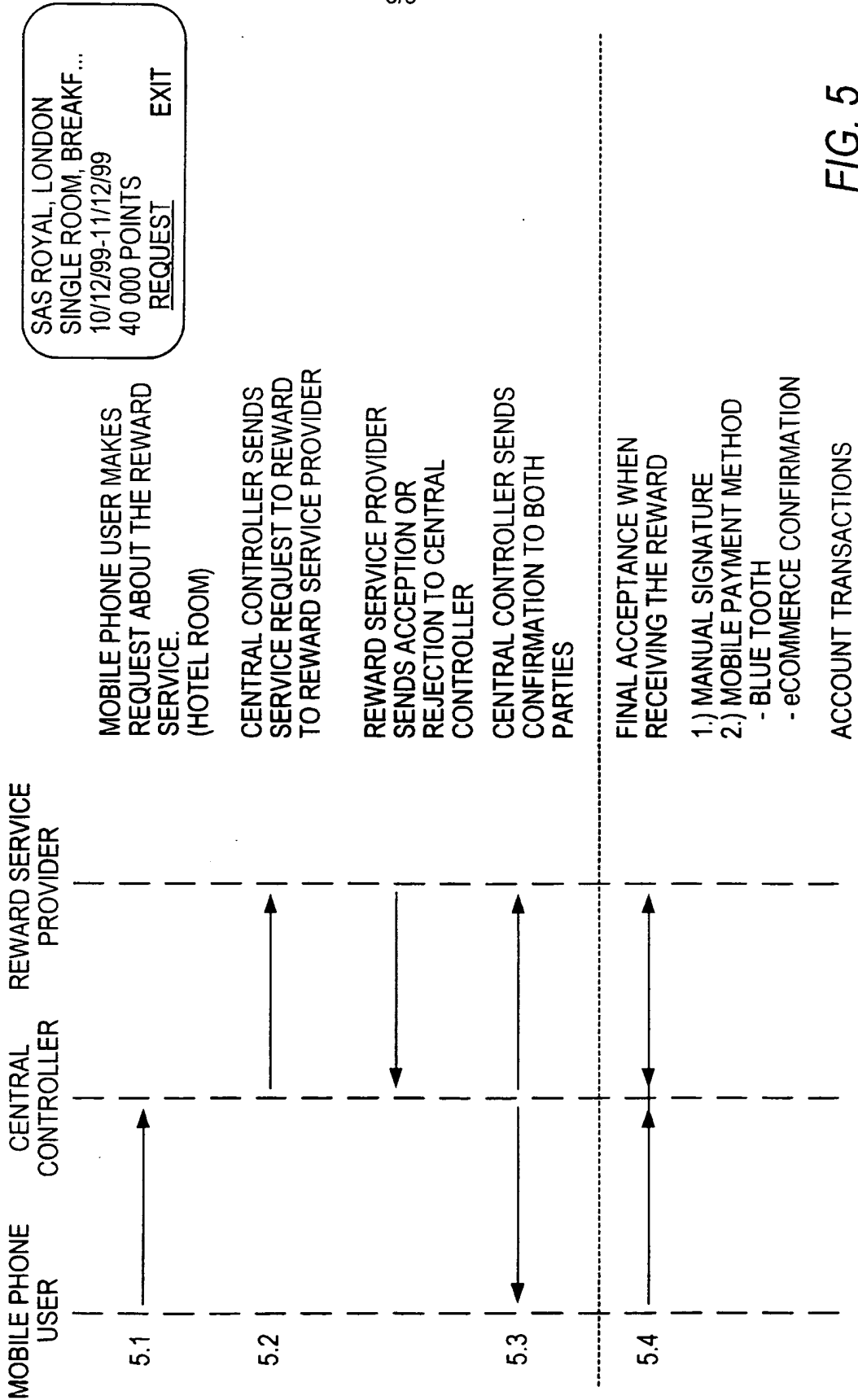


FIG. 5